

Science Report

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Problem

I have always wondered how much bacteria is living on a computer keyboard. It is a surface that people are constantly touching, but rarely disinfect it. I would like to compare the bacteria growth from a computer spacebar key to the bathroom door handle here at school.

Introduction

Just think about this for a second. How many times do you clean and disinfect your bathroom at home? A lot, huh, but how many times do you disinfect and clean your laptop/computer? Not as much.

Background Information

People are constantly coming into contact with bacteria. There are hundreds of bacteria in your body, but most are what occurs naturally and needed by your body. American Society of Microbiology performed a study on middle and high school school students and they said 50% of them say they washed their hands. During the actual experiment 33% of females, 8% of males actually used soap.

Hypothesis

I predict that the computer keyboard will develop more bacteria in the test than both bathroom door handles

Materials

- Incubator
- Thermometer
- 10 petri dishes (If without agar you will need to make some)
- Agar
- 8 sterile cotton swabs
- Distilled Water
- Zip-Lock bags

- Sticky Notes
- Sharpie marker
- Bleach and or bacteria killing cleaner
- Plastic gloves and bag
- Camera

Procedure

1. Gather all materials
2. Heat incubator to 80°F
3. Dip cotton swab in distilled water
4. Swab the test portion for at least 10 seconds getting all sides of the cotton swab
5. Being careful to not contaminate the swab or dishes swab the cotton swab on the petri dish is a squiggly pattern getting all the sides on the agar
6. Immediately cover the dish with the cover and put it in a Ziplock bag.
7. Label the bag with the Sharpie, ie. (Men's Bathroom Handle Outside)
8. Do this with all of your test materials
9. Place in heated incubator
10. Let grow for 7 days
11. Take pictures and notes of growth daily at the same time of day
12. After growing for 7 complete days, examine the final growth
13. Spray disinfectant/bacteria killer inside the dishes
14. Dispose properly
15. Disinfect the area surrounding the incubator and the inside of the incubator
16. Wash hands thoroughly with antibacterial soap afterwards

Variables

- **Independent** – Are the computers hosting more bacteria than the bathroom door handles

- **Dependent** – The amount of bacterial growth on the petri dish
- **Control** - Same amount of growing time, same heat, same picture taking time

Results

Day 7 results (Amount of colonies),

Control - 0

Dell #5 - 27

Dell #6 - 26

Dell #7 - 31

Dell #17 - Results thrown out

Boys Bath. Out. - 4

Boys Bath. In. - 2

Girls Bath. Out. - 26

Girls Bath. In. - 29

Conclusion

I conclude that the computers grew more bacterial colonies than the bathroom door handles

The computers grew 164.7% more bacteria than the bathroom door handles combined

Major Observations

- One computer grew a large colony of a fungus
- The girls bathroom door handles grew more than the boys
- The petri dishes had a strong odor
- The computers bacterial counts were very similar

Possible Causes of Error

- The control didn't get enough growing time in the incubator
- Dishes in different spots in incubator
- Dell #17 - swabbed with too much water, results thrown out
- Dishes on bottom stayed on the bottom

Further Research

- I could have tested which brand of hand sanitizer kills the most bacteria.
- Tested which brand of kitchen cleaner kills the most bacteria

Time Spent

I spent 27 hours on this experiment. Most of this experiment was done during science fair workdays, but a good part of it was done at home.

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